

CLAIMS

1. Vaccine composition containing proteolipidic cochlear structures obtained from vesicles found in the outer membranes of live microorganisms and optionally supplemented by one or more antigens, as well as an adequate excipient.
2. Vaccine composition according to Claim 1, with said cochlear structures comprised of proteins, lipids and molecular structures associated to pathogens.
3. Vaccine composition according to Claim 2, with said molecular structures associated to pathogens added at a concentration between 1 % and 30 % of the protein weight of the cochlear structure.
4. Vaccine composition according to Claim 3, with said molecular structures associated to pathogens selected from the group consisting in lipopolysaccharides, peptidoglycan, lipoprotein, teichoic acid, flagellin and lipophosphoglycane.
5. Vaccine composition according to Claim 1, characterized by the fact that the live organism supplying the vesicles of outer membrane is a bacterial, protozoan or animal cell organism.
6. Vaccine composition according to Claim 5, characterized by the fact that said bacterium can be Gram negative or Gram positive.
7. Vaccine composition according to Claim 6, characterized by the fact that said Gram negative bacterium can be of the *Neisseria*, *Haemophilus*, *Salmonella*, *Vibrio*, *Pseudomona* or *Shigella* genus.
8. Vaccine composition according to Claim 6, characterized by the fact that said Gram positive bacterium may be of the *Streptococcus* or *Staphylococcus* genus.
9. Vaccine composition according to Claim 5, characterized by the fact that said live organism is the protozoan of the *Lieshmania* genus.
10. Vaccine composition according to Claim 5, characterized by the fact that the cochlear structures are extracted from a tumor cell.

11. Vaccine composition according to Claim 1, with the antigens additionally included found at ratio with the proteins present in the cochlear structure of 0.2 to 2.7 μg to 3 to 9 μg of protein.
12. Vaccine composition according to Claim 1, with the antigens to be additionally included selected from the group consisting in: natural or recombining proteins, peptides, saccharides, nucleic acids, conjugates or allergenics.
13. Vaccine composition according to Claim 12, with the added antigen being a protein from the hepatitis C virus.
14. Vaccine composition according to Claim 12, with the added antigen being the recombining protein P1 from papillomavirus.
15. Vaccine composition according to Claim 12, with the added antigen being the epitope T or B.
16. Vaccine adjuvant containing proteolipidic cochlear structures obtained from vesicles found in the outer membranes of live organisms.
17. Vaccine adjuvant according to Claim 16, with said cochlear structures composed of proteins, lipids, and molecular structures associated to pathogens.
18. Vaccine adjuvant according to Claim 17, with said molecular structures associated to pathogens found at a concentration between 1 % and 30 % of the protein weight of the structure.
19. Vaccine adjuvant according to Claim 17, with said molecular structures associated to pathogens selected from the group consisting in lipopolysaccharide, peptidoglycane, lipoprotein, teichoic acid, flagellin and lipophosphoglycane.
20. Vaccine adjuvant according to Claim 16, characterized by the fact that the live organism supplying the vesicles of outer membrane used to form the cochlear structures is a bacterium, a protozoan or an animal cell.

21. Vaccine adjuvant according to Claim 20, characterized by the fact that said bacterium is a Gram negative or a Gram positive.
22. Vaccine adjuvant according to Claim 21, characterized by the fact that said Gram negative bacterium is of *Neisseria*, *Haemophilus*, *Salmonella*, *Vibrio*, *Pseudomona* or *Shigella* genus.
23. Vaccine adjuvant according to Claim 21, characterized by the fact that said Gram positive bacterium is of the *Streptococcus* or *Staphylococcus* genus.
24. Vaccine adjuvant according to Claim 20, characterized by the fact that said live organism is a protozoan organism from the *Leishmania* genus.
25. Vaccine adjuvant according to Claim 20, with the cochlear structures derived from a tumor cell.
26. Vaccine composition containing vesicles obtained from the outer membrane of live organisms and, optionally, one or more antigens, as well as an adequate excipient.
27. Vaccine composition according to Claim 26, with said outer membrane vesicles composed of proteins, lipids and molecular structures associated to pathogens.
28. Vaccine composition according to Claim 27, with said molecular structures associated to pathogens found at a concentration between 1 % and 7 % of the protein weight of the structure.
29. Vaccine composition according to Claim 27, with said molecular structures associated to pathogens selected from the group consisting in lipopolysaccharide, peptidoglycane, teichoic acid, flagellin and lipophosphoglycane.
30. Vaccine composition according to Claim 26, characterized by the fact that the live organism supplying the vesicles of outer membrane used to form the cochlear structures is a bacterium, a protozoan or an animal cell.
31. Vaccine composition according to Claim 30, characterized by the fact that said bacterium is a Gram negative or a Gram positive.

32. Vaccine composition according to Claim 31, characterized by the fact that said Gram negative bacterium is of *Neisseria*, *Haemophilus*, *Salmonella*, *Vibrio*, *Pseudomona* or *Shigella* genus.
- 5 33. Vaccine composition according to Claim 31, characterized by the fact that said Gram positive bacterium is of the *Streptococcus* or *Staphylococcus* genus.
34. Vaccine composition according to Claim 30, characterized by the fact that said live organism is a protozoan organism from the *Leishmania* genus.
- 10 35. Vaccine composition according to Claim 30, with the outer membrane vesicles derived from a tumor cell.
36. Vaccine adjuvant containing vesicles extracted from the outer membrane of live organisms.
- 15 37. Vaccine adjuvant according to Claim 36 with said outer membrane vesicles composed of proteins, lipids, and molecular structures associated to pathogens.
- 20 38. Vaccine adjuvant according to Claim 37, with said molecular structures associated to pathogens found at a concentration between 1 % and 7 % of the protein weight of the structure.
39. Vaccine adjuvant according to Claim 37, with said molecular structures associated to pathogens selected from the group consisting in lipopolysaccharide, peptidoglycane, teichoic acid, flagellin and lipophosphoglycane.
- 25 40. Vaccine adjuvant according to Claim 36, characterized by the fact that the live organism supplying the vesicles of outer membrane used to form the cochlear structures is a bacterium, a protozoan or an animal cell.
- 30 41. Vaccine adjuvant according to Claim 40, characterized by the fact that said bacterium is a Gram negative or a Gram positive.
- 35 42. Vaccine adjuvant according to Claim 41, characterized by the fact that said Gram negative bacterium is of *Neisseria*, *Haemophilus*, *Salmonella*, *Vibrio*, *Pseudomona* or *Shigella* genus.

43. Vaccine adjuvant according to Claim 41, characterized by the fact that said Gram positive bacterium is of the *Streptococcus* or *Staphylococcus* genus.

5 44. Vaccine adjuvant according to Claim 40, characterized by the fact that said live organism is a protozoan from the *Leishmania* genus.

45. Vaccine adjuvant according to Claim 40, with the outer membrane vesicles derived from a tumor cell.

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46. A method for obtaining cochlear structures from vesicles found in the outer membrane of live organisms, composed of the following steps:

15 a. Preparation from outer membrane vesicles, of a solution with a total protein concentration between 3 and 6 mg/mL, to which a non-ionic detergent is added at a concentration 10 times that of the proteins.

20 b. Should one wish to incorporate other antigens of interest or molecular structures associated to pathogens, these are added to the solution prepared in a), homogenizing it at 0.2 to 2.7 μ g for each 3 to 9 μ g of protein for the antigens and from 1 to 30 % of the protein concentration for the molecular structures.

25 c. Following this, the solution of steps a) and b) is filtered through a membrane with a pore size of 0.2 μ m, with the aim of sterilizing and eliminating vesicle aggregates yet found in it.

30 d. A rotational dialysis or a tangential filtration is then executed, against a solution containing concentrations of a multivalent ion, particularly Ca^{2+} , Zn^{2+} , or Mg^{2+} , between 2.5 and 6.5 mM, at conditions buffered at $\text{pH } 7.4 \pm 0.2$.

e. Finally, the cochlear structures obtained are mechanically treated, submitted, especially, to sonication in a water bath at a temperature between 15°C and 25°C for a period of 45 minutes, in order to homogenize the size of the particles.

35 47. Vaccine composition according to Claims 1 to 15, administered mucosally, parenterally, or through a combination of both methods.

48. Vaccine composition according to Claims 26 to 35, administered mucosally, parenterally, or through a combination of both methods.

5 49. The adjuvant according to Claims 16 to 25, administered mucosally, parenterally, or through a combination of both methods.

50. The adjuvant according to Claims 36 to 45, administered mucosally, parenterally, or through a combination of both methods.

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